Abstract of the Disclosure

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A vehicular generator-motor 1 is composed of a rotor, a stator having three phase armature winding 2, and a converter 4. The rotor is provided with a field winding 3 for magnetizing a plurality of magnetic pole pieces 14a, 15a, and permanent magnets 17 for magnetizing the magnetic pole pieces 14a, 15a together with the field winding 3. When the generator-motor 1 is operated as a motor, the converter 4 is operated as an inverter to restrain the armature current at the time of low speed rotation to the extent of the additional magnetic flux from the permanent magnets.